

CHROMOSOME NUMBERS OF ANGIOSPERMS IN TANZANIA: II

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ABSTRACT: Chromosome numbers of 27 species of Angiosperms from Tanzania are reported. Of these, chromosome counts for 9 species are reported for the first time. The results obtained from Tanzania are compared with the available data from other countries.

RÉSUMÉ : Publication des nombres chromosomiques de 27 espèces d'Angiospermes de Tanzanie, dont 9 inédits. Comparaison de ces résultats avec ceux obtenus dans d'autres pays.

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This is the second paper of a continuing series of chromosome number of Angiosperms in Tanzania. Previous contribution (GILL & ABUBAKAR, 1975) to this series have dealt with 30 species of angiosperms. In the present paper chromosome number for 27 species of angiosperms have been determined and nine of these counts are reported for the first time.

MATERIAL AND METHODS

Voucher specimens on which the present paper is based were collected at random. Flower buds were fixed in 1:3 acetic alcohol for 12 hours and then transferred to 70 % ethanol. The anthers were squashed in 2 % acetocarmine. The mitotic chromosome numbers were determined from root tips by pretreating the roots with Paradichlorobenzene for two hours, hydrolyzing them in N. HCl for ten minutes at 60 °C, and squashing them in 2 % acetocarmine. In order to ascertain the chromosome number about 20-30 cells of each taxon were analysed. The results of the chromosome counts along with vouchers, origin of the materials are summarized in Table I. The species marked by an asterisk are not known to have any previous published record and are documented with camera lucida drawings. Vouchers are kept in the herbarium of the university of Dar-es-Salaam, Tanzania. The arrangement of the families is according to DALLA TORRE & HARMS (1907), with addition from ENGLER & DIELS, ed. 2 (1936).

DISCUSSION

LILIACEÆ

Anthericum

The haploid chromosome counts of 8 (Pl. 1, 1) in *A. brehmerianum* agrees with the base chromosome number of 8 reported for this genus by DARLINGTON & WYLIE (1955). The frequency of polyploidy in this genus is 63.6 % and from Tanzania polyploidy has been recorded in *A. suffruticosum* (GILL & ABUBAKAR, 1975).

Chlorophytum

Chlorophytum filipendulum is commonly found in tight clump of 10-15 plants in limestone rocks. The haploid chromosome number of 7 (Pl. 1, 2) is a new report for this species. The chromosome number of $n = 8$ (Pl. 1, 3) in *C. carsonii* is also reported here for the first time. Both these reports are in line with the base numbers of 7 & 8 for this genus as suggested by DARLINGTON & WYLIE (1955). The frequency of polyploidy in this genus is 54.6 % and the grade of ploidy level is fairly high as 12-ploidy has been reported in *C. arundinaceum* by KUROSAWA (1966).

Drimiopsis

The diploid counts of 64 (Pl. 1, 4) in *D. volkensii* agree with the base chromosome number of 8. But the previous reports in two other species, namely *D. maculata* with $2n = 60$ (FERNANDES & NEVES, 1962) and *D. kirkii* with $2n = 68$ (MAHALAKSHIMA & SHERIFF, 1970) do not agree with the base number of 8 for this genus. However, more species have to be investigated before any conclusion can be made about the chromosomal diversity of this genus.

MALVACEÆ

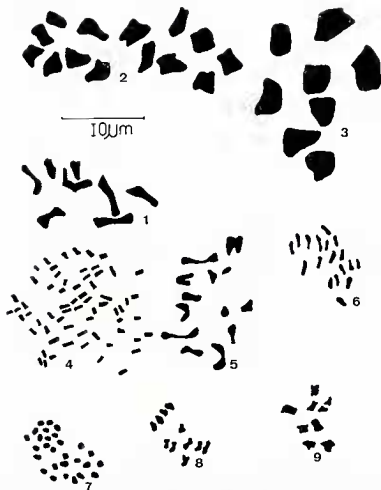
Thespesia

The gametic chromosome number of 12 (Pl. 1, 5) is a new report for *T. dani*s and agrees with the base number of 12.

RHIZOPHORACEÆ

Ceriops

The present haploid chromosome number of 18 (Pl. 1, 6) is a new count for *C. tagal* and is in line with the basic chromosome number of 18 as reported by SIDHU (1969).



Pl. 1. — Chromosome numbers: 1, *Anthericum brehmerianum*, $n = 8$, diakinesis; 2, *Chlorophytum filipendulum*, $n = 7$, mixed anaphase first; 3, *Chlorophytum carsonii*, $n = 8$, first metaphase; 4, *Drimiopsis volkensii*, $2n = 64$, mitotic metaphase; 5, *Thespesia danis*, $n = 12$, first metaphase; 6, *Cerriops tagal*, $n = 18$, first metaphase; 7, *Leucas martinicensis*, $n = 14$, anaphase first; 8, *Psychotria swynnertonii*, $n = 11$, metaphase first; 9, *Conyza floribunda*, $n = 9$, metaphase first.

LABIATÆ

Leucas

Leucas martinicensis is a procumbent weed in dry open places. The haploid count of 14 (Pl. 1, 7) is a new report for this species and agrees with the basic number of 7 suggested by MORTON (1962).

TABLE 1: CHROMOSOME NUMBERS IN TANZANIAN ANGIOSPERMS

TAXA	CHROMOSOME NUMBER	ORIGIN	VOU- CHER
LILIACEÆ			
* <i>Anthericum brehmerianum</i> Bak.	$n = 8$ (fig. 1)	Wami plains	Gill 079
* <i>Chlorophytum filipendulum</i> Bak.	$n = 7$ (fig. 2)	Mweni, W of Tanga	Harris 3486
* <i>C. carsonii</i> Bak.	$n = 8$ (fig. 3)	Iringa	Harris 10309
* <i>Drimiopsis volkensii</i> Bak.	$2n = 64$ (fig. 4)	Pongwe	Harris 4422
ZINGIBERACEÆ			
<i>Costus afer</i> Ker-Gawl.	$n = 18$	Kimbosa Forest Reserve	Gill 089
LEGUMINOSÆ			
<i>Cajanus cajan</i> (L.) Millsp.	$n = 11$	Dar-es-Salaam Univ. Campus	Gill 083
<i>Cassia occidentalis</i> L.	$n = 14$	Dar-es-Salaam Univ. Campus	Gill 094
<i>Crotalaria kirkii</i> Bak.	$n = 8$	Dar-es-Salaam Univ. Campus	Gill 095
<i>Tephrosia linearis</i> (Willd.) Pers.	$n = 11$	Dar-es-Salaam Univ. Campus	Gill 070
MELIACEÆ			
<i>Xylocarpus granatum</i> Koen. (syn. <i>Carapa obovata</i> Bl.)	$n = 21$	Kilwa Road, Dar-es-Salaam	Gill 073
MALVACEÆ			
<i>Abutilon grandiflorum</i> G. Don	$n = 21$	Dar-es-Salaam Univ. Campus	Gill 092
* <i>Thespesia danis</i> Oliv.	$n = 12$ (fig. 5)	Dar-es-Salaam Univ. Campus	Gill 093
STERCULIACEÆ			
<i>Waltheria indica</i> L.	$n = 20$	Dar-es-Salaam Univ. Campus	Gill 090
RHIZOPHORACEÆ			
<i>Bruguiera gymnorhiza</i> Lank.	$n = 18$	Kilwa Road, Dar-es-Salaam	Gill 074
* <i>Ceriops tagal</i> (Per.) C.B. Robinson	$n = 18$ (fig. 6)	Kilwa Road, Dar-es-Salaam	Gill 071
LABIATÆ			
* <i>Leucas martinicensis</i> R. Br.	$n = 14$ (fig. 7)	Dar-es-Salaam Univ. Campus	Gill 069
SCROPHULARIACEÆ			
<i>Scoparia dulcis</i> L.	$n = 10$	Kilwa Road, Dar-es-Salaam	Gill 077

TAXA	CHROMOSOME NUMBER	ORIGIN	VOU- CHER
RUBIACEÆ			
* <i>Psychotria swynnertonii</i> Bremek. . .	$n = 11$ (fig. 8)	Kiroka Pass, Morogoro Distr.	Gill 091
COMPOSITÆ			
<i>Bidens pilosa</i> L.	$n = 12$	Dar-es-Salaam Univ. Campus	Gill 096
* <i>Conyza floribunda</i> H.B.K.	$n = 9$ (fig. 9)	Kinole, Morogoro Distr.	Gill 086
<i>Emilia coccinea</i> (Sims) Sweet . .	$n = 5$	Dar-es-Salaam Univ. Campus	Gill 097
<i>E. souchifolia</i> DC.	$n = 5$	Dar-es-Salaam Univ. Campus	Gill 081
<i>Erlangea cordifolia</i> (Benth. ex Oliv.) Moore	$n = 10$	Morogoro city	Gill 098
<i>Senecio abyssinicus</i> Sch. Bip. . .	$n = 5$	Sikonge, Tabora	Gill 087
<i>S. discifolius</i> Oliv.	$n = 5$	Morogoro city	Gill 088
<i>Sonchus asper</i> Vill.	$n = 9$	Dar-es-Salaam Univ. Campus	Gill 085
<i>Vernonia amulans</i> Vatke	$n = 10$	Mole-Sikonge, Tabora	Kinunda, FMG, s.n.
<i>V. cinerea</i> (L.) Less.	$n = 9$	Dar-es-Salaam Univ. Campus	Gill 084

RUBIACEÆ

Psychotria

Psychotria swynnertonii is a roadside plant. The gametic chromosome number of 11 (Pl. 1, 8) is a new count for this species. All the cytologically investigated species except *P. vogeliana* Benth. with $2n = 44$ (BAKER, 1958) are diploids.

COMPOSITÆ

Conyza

The haploid chromosome number of 9 in *C. floribunda* is a new report for this species and is in line with the base number of 9 (DARLINGTON & WYLIE, 1955).

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